

Preliminary Study of SPECT-MRI Compatibility for a Clinical SPECT-MRI INSERT

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The INSERT (INtegrated SPECT/MRI for Enhanced stratification of brain tumors in Radio-chemoTherapy) is the world's first clinical SPECT-MRI brain imaging system. Here we demonstrate its use within a clinical MRI environment for the first time. The INSERT has been evaluated as a stand-alone SPECT scanner and preclinical designs demonstrate the feasibility of simultaneous SPECT-MRI. Customised MRI sequences are implemented here to overcome system interference and field inhomogeneity introduced by presence of the INSERT in the MRI during simultaneous acquisition. We also acquired SPECT data within the MRI environment to evaluate the SPECT system performance. Finally we present a set of sequential SPECT-MRI data, demonstrating imaging capabilities of the complete system.

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